



UNITED STATES PATENT AND TRADEMARK OFFICE

SAC

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,493	11/10/2003	Eric Hamilton	112056-0120	5124
24267	7590	02/22/2007	EXAMINER	
CESARI AND MCKENNA, LLP 88 BLACK FALCON AVENUE BOSTON, MA 02210			PARDO, THUY N	
			ART UNIT	PAPER NUMBER
			2165	
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
3 MONTHS	02/22/2007	PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/705,493	HAMILTON ET AL.	
	Examiner Thuy N. Pardo	Art Unit 2165	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 29 November 2006.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 6,7 and 12-58 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 6, 7 and 12-58 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 29, 2006 has been entered.
2. In Applicant's Amendment filed on November 29, 2006, claims 6, 7 and 12-58 are pending in the application. Claims 1-5 and 8-11 are canceled, claims 612-15, 19, 20, 27, 30, 35, 36, 41 are amended, and claims 42-58 are added. This Office Action is Non-Final.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference

claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 6, 7 and 12-58 are provisionally rejected on the ground of nonstatutory double patenting over claims 1-23 of copending Application No. 10/705,025 and claims 1-20 of copending Application No. 10/075,470. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending applications and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows: a method for writing data to a file during consistency points.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 6, 7, 21-26, 30-58 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding to claims 6, 7, 21-26, 30-58, the phrase "to be written", found in lines 1-2 and 4 of claim 6, line 1 of claim 21, lines 5 of claim 30, lines 5 of claim 35, lines 6 of claim 36, lines 5 of claim 41, lines 1, 3 of claim 42, lines 1, 3 of claim 50, and lines 3, 5 of claim 58, renders the claims indefinite because the claims include elements not actually disclosed (those encompassed by "to be written"), thereby rendering the scope of the claims unascertainable. See MPEP § 2173.05(d).

Regarding to claim 21, the phrase "if the buffer is dirty" renders the claims indefinite and incomplete because the claims include elements not actually disclosed (those encompassed by "if the buffer is dirty"), thereby rendering the scope of the claims unascertainable. See MPEP § 2173.05(d).

Regarding to claim 21 recites the limitation "the buffer" in lines 3, 4 and 7. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 6, 7 and 12-42, 44-50 and 52-58 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claimed invention is not practical because firstly, the claimed invention is limited to an abstract idea does not produce a useful, concrete and tangible result, and secondly, the claimed invention does not produce physical transformations to a different state or thing. There are no hardware or devices in the body of claims.

Allowable Subject Matter

6. Claims 6-7, 19-20, 35 and 41 are allowed. The reasons for the indication of allowable subject matter for these claims have been addressed in the previous action.

Claims 43, 46, 51 and 54 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding to claims 43 and 51, the limitations of selecting a time for writing the current consistency point to persistent storage; locating buffer data which has been written to a buffer but which has not been written to persistent storage before the time selected for the current consistency point to be written to persistent storage; and capturing the buffer data into the current

consistency point, taken together with other limitations of claims 42 or 50, were not disclosed by the prior art of record.

Regarding to claims 46 and 54, the limitations of “utilizing modulo-two arithmetic with the CP counter to perform an AND operation using “CP AND 1” to obtain a first value of 0 or 1; and utilizing modulo-two arithmetic with the CP counter to perform an AND operation using “1-(CP AND 1)” to obtain a second value of 0 or 1, to produce flag values alternating between values of “0” and “1” to represent current and next consistency points, taken together with other limitations of claims 42, 44 and 45, or claims 50, 52 and 53, were not disclosed by the prior art of record.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the

reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

1. Claims 12-58 are rejected under 35 U.S.C. 102(e) as being anticipated by Koseki et al. (Hereinafter “Koseki”) US Patent No. 6,732,124.

As to claim 15, Koseki teaches the invention substantially as claimed, comprising:

a write allocation process of a file system [log writing unit for repairing a file system when its consistency is lost, see the abstract] , the write allocation process adapted to associated received file data with a buffer data control structure upon receipt of a write operation directed to the file while the file is undergoing write allocation [col. 7, lines 45 to col. 8, lines 36; s2-s9 of fig. 15; acknowledgement, col. 26, lines 6-24].

a consistency point counter used to label modified data as belonging to the current consistency point or the next consistency point [state “Dirty” implies that information the memory has been modified, but the modification has not yet been reflected in the disk storage, S13 of fig. 17; col. 20, lines 12 to col. 21, lines 2], and capturing data modified for the current consistency point in the current consistency point and not capturing data belonging to the next consistency point [col. 21, lines 3-11; S18-S22 of fig. 17; col. 20, lines 21 to col. 21, lines 11].

As to claim 21, Koseki teaches the invention substantially as claimed as specified in claim 15 above. Koseki further teaches:

determining if the buffer is dirty for the current consistency point [S13 of fig. 17; col. 20, lines 12 to col. 21, lines 2];

performing, in response to determining that the buffer is dirty for the current consistency point, write allocation of a buffer associated with the file for a current consistency point [col. 21, lines 3-11]; and

freeing, if the buffer is dirty for the next consistency point, data written during the step of write allocation [S18-S22 of fig. 17; col. 20, lines 21 to col. 21, lines 11].

As to claim 27, Koseki teaches the invention substantially as claimed as specified in claim 15 above. Koseki further teaches:

a flags array having entries for flags associated with a current consistency point and entries associated with a next consistency point [col. 20, lines 21 to col. 21, lines 11];

a first data pointer pointing to a file data associated with the current consistency point [current log write pointer, col. 40, lines 43-55; col. 42, lines 59-63]; and

a second data pointer pointing to file data associated with the next consistency point [col. 42, lines 59-63; col. 43, lines 1-5].

As to claims 12, 15, 30, 36, 40, 42, 50 and 58, all limitations of this claim have been addressed in the analysis above, and this claim is rejected on that basis.

As to claim 10, Koseki teaches the invention substantially as claimed. Koseki further teaches that entries associated with the current consistency point and the next consistency point

are differentiated by performing modulo two additions to a consistency point counter [col. 40, lines 44-62; col. 42, lines 55 to col. 43, lines 23].

As to claim 14, Koseki teaches the invention substantially as claimed. Koseki further teaches that the second pointer in the buffer data control structure points to data already written to the file [col. 42, lines 43 to col. 43, lines 26].

As to claim 45, Koseki teaches the invention substantially as claimed. Koseki further teaches using a monotonically increasing consistency point (CP) counter to identify the current CP as the current value of the CP counter, and the next CP as the value of the CP counter plus 1 [figs. 16 and 20; col. 19, lines 45-56; col. 23, lines 35].

As to claim 47, Koseki teaches the invention substantially as claimed. Koseki further teaches associating the received data with a buffer data control structure by setting a pointer in the buffer data control to a memory location associated with the received data [control flags, symbols, col. 23, lines 25-50].

As to claim 48, Koseki teaches the invention substantially as claimed. Koseki further teaches marking the buffer data control structure as being dirty for a next consistency point by setting a flag in a flag array of the buffer data control structure [fig. 20; col. 23, lines 25-50].

As to claim 49, Koseki teaches the invention substantially as claimed. Koseki further teaches differentiating entries associated with the current consistency point and the next consistency point by performing modulo two additions to a consistency point counter [two concurrent transactions requesting and releasing a resource, or make two or more modifications to a single metadata object, see fig. 19].

As to claims 9, 11, 16-19, 22-26, 28, 29, 31-34, 37-40, 52-53 and 55-58, all limitations of these claims have been addressed in the analysis above and in the previous action, and these claims are rejected on that basis.

Response to Arguments

2. Applicant argues that claims 1-20 and 27-29 allows write allocation during CP that result in an “immediate benefit” to client of decreased latency caused by a large number of incoming write operations that may be queued and suspended while the CP write allocation operation is performed (page 5, lines 10-30).

As to this point, Examiner respectfully disagrees. It is noted that the features upon which applicant relies (i.e., immediate result to client) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant argues that Koseki does not teach marking data as being dirty for a next consistent point.

Art Unit: 2165

Examiner respectfully disagrees. It should be noted that Koseki teaches this feature.

Koseki teaches a deallocation-dirty flag set to one or zero, the corresponding bitmap blocks on the memory must have new information, meaning that they have to be recorded by the logging system [col. 20, lines 1 to col. 21, lines 11].

Applicant argues that Koseki does not teach writing allocate to file while the file is undergoing write allocation.

Examiner respectfully disagrees. Koseki teaches two concurrent transactions requesting and releasing a resource [see fig. 19; col. 21, lines 45-54]

3. Applicant's arguments have been fully considered but they are not persuasive.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuy Pardo whose telephone number is 571-272-4082. The examiner can normally be reached on Mon-Thur.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on 571-272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2165

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

February 17, 2007



THUY N. PARDO
PRIMARY EXAMINER